WHAT IS CLAIMED IS:

1. A multi-pole electric machine rotor comprising:

a rotor body having defined pole regions with pole faces and sides adjacent the pole faces;

at least a pair of prefabricated winding modules each having sequentially abutting field windings, said modules being fitted over the sides of the pole regions;

each said module including a winding support having generally radially extending circumferentially spaced support elements defining slots therebetween for receiving the field windings; and

filler strips radially outwardly of said windings in each said slot and secured between radially outer ends of adjacent pairs of said support elements.

2. A rotor according to Claim 1 wherein said filler strips and said adjacent pairs of support elements have a tongue-and-groove connection therebetween.

3. A rotor according to Claim 1 wherein said filler strips and said adjacent pairs of support elements have dovetail connections therebetween.

4. A rotor according to Claim 1 wherein said filler strips and said support elements have aligned arcuate outer surfaces forming portions of a generally cylindrical surface about the rotor.

5. A rotor according to Claim 1 wherein each side of the pole face and a pole side of the support brace define an opening therebetween and a magnetic wing disposed in said opening enabling magnetic flux dispersal at the rotor surface.

6. A rotor according to Claim 1 wherein said rotor body has a flange projecting perpendicular to a center line of the poles, each said module having a stop for engaging against said flange to position the modules about the rotor body.

7. A rotor according to Claim 1 wherein said support elements are axially and circumferentially spaced from one another, defining generally radially outwardly extending cooling paths between the windings.

8. A rotor according to Claim 1 wherein said support braces are formed of non-conductive material comprising one of a fiber composite laminate or a powder-coated metal.

9. A multi-pole electric machine rotor comprising:

a rotor body having defined pole regions with pole faces and sides adjacent the pole faces;

at least a pair of prefabricated winding modules each having sequentially abutting field windings, said modules being fitted over the sides of the pole regions with the field windings extending continuously in multiple coils about the sides and ends of the pole regions;

a first electrical connector carried by the rotor body and a first mating electrical connector carried by an end coil of the windings of one of said modules for electrically connecting a main lead external of said rotor body and said one module;

a second electrical connector carried by said rotor body;

a second electrical connector carried by an opposite end coil of the windings of said one module and a first mating electrical connector carried by an end coil of the windings of a second of said modules for electrically connecting the first and second modules one to the other; and

a second electrical connector carried by an opposite end coil of the windings of the second module for electrical connection with said second electrical connector carried by said rotor body completing a circuit through the modules and rotor.

10. A rotor according to Claim 9 wherein said first electrical connector carried by said one module is carried by an innermost end coil of the first module.

11. A rotor according to Claim 9 wherein said first electrical connector carried by said one module is carried by an outermost end coil of the first module.

12. A rotor according to Claim 9 wherein said electrical connections comprise male and female plug-in connections.

13. A rotor according to Claim 9 wherein said first mating electrical connection carried by said end coil of said one module is located radially inwardly of said end winding.

14. A rotor according to Claim 9 wherein said modules are assembled onto said rotor body in a generally radial direction, said electrical connections between said rotor and said modules including plug-in connections generally parallel to the radial direction of assembly of the modules onto the rotor.

15. A method of electrically connecting prefabricated winding modules and a multi-pole electrical machine rotor comprising the steps of:

(a) assembling the modules onto the rotor by displacing the modules in respective radial inward directions onto the rotor;

(b) electrically connecting the modules one to the other in response to displacement of the modules in the respective radial inward directions onto the rotor to form a series electrical connection between the modules; and

(c) electrically connecting first and last modules of the series connected modules with respective electrical connectors carried by the rotor in response to displacement of the modules in the respective radial inward directions onto the rotor.

16. A method of electrically connecting first and second prefabricated winding modules and a multi-pole electric machine rotor and electrically connecting the modules with one another during assembly of the modules onto the rotor in a generally radial direction comprising the steps of:

(a) providing first and second electrical connectors on the rotor oriented in a direction generally parallel to the direction of assembly of the modules onto the rotor;

(b) providing first and second electrical connectors on the respective first and second modules oriented in directions generally parallel to the respective directions of assembly of the modules onto the rotor for mating with the first and second electrical connectors on the rotor, respectively;

(c) providing third and fourth electrical connectors on the respective first and second modules in directions generally parallel to the respective directions of assembly of the modules onto the rotor for mating with one another; and

(d) assembling the modules in respective radial directions onto the rotor to electrically connect the first and second electrical connectors on the rotor and the mating first and second electrical connectors on the first and second modules, respectively, and to

electrically connect the third and fourth electrical connectors on the first and second modules with one another.

17. A method according to Claim 16 including providing the mating electrical connectors with male and female plug-in connections.